

CLAIMS

1. A process for production of a compound oxide, comprising

5 contacting an organic phase having
dissolved therein an organic compound which produces a
hydroxide of a first element when hydrolyzed, with an
aqueous phase containing a second element as an ion, to
produce a product of the hydroxide of the first element
by hydrolysis reaction of the organic compound at their
10 interface between said organic and aqueous phases while
incorporating the second element in the product, and
 firing the resulting product to produce a
compound oxide of the first element and second element.

2. A process for production of a compound oxide
15 according to claim 1, wherein said aqueous phase further
contains a third or additional elements as ions, said
product further contains a third or additional elements,
and the obtained compound oxide is a compound oxide of
the first, second and third or additional elements.

20 3. A process for production of a compound oxide
according to claim 1, wherein a water-in-oil type
emulsion system or microemulsion system is used.

4. A process for production of a compound oxide
25 according to claim 3, wherein the size of the aqueous
phase of the water-in-oil type microemulsion is in the
range of 2-40 nm.

5. A process for production of a compound oxide
30 according to claim 1, wherein said organic compound is a
metal alkoxide or an acetate-metal complex, and the
second and/or third or additional element ions are ions
of inorganic acid metal salts.

6. A process for production of a compound oxide of
zirconium and cerium, comprising

35 preparing a microemulsion comprising an
organic phase dispersed in an aqueous phase, said organic
phase having dissolved therein a zirconium alkoxide, said
aqueous phase containing a cerium salt;

conducting said organic phase with said
aqueous phase to produce a product of zirconium hydroxide
by hydrolysis reaction of the zirconium alkoxide at their
interface between said organic and aqueous phases while
5 incorporating the zirconium element in the product, and
firing the resulting product to produce a
compound oxide of zirconium and cerium.

7. A process for production of an exhaust gas
purifying catalyst carrier, characterized by producing
10 the exhaust gas purification catalyst carrier by a
production process according to any one of claims 1 to 6.